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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,905	02/10/2004	Ramsay Mussen	EH-11046	1201
30188	7590	03/13/2008		
PRATT & WHITNEY 400 MAIN STREET MAIL STOP: 132-13 EAST HARTFORD, CT 06108			EXAMINER	
			AFZAL, SARANG	
			ART UNIT	PAPER NUMBER
			3726	
			MAIL DATE	DELIVERY MODE
			03/13/2008 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/775,905

**Applicant(s)**

MUSSEN, RAMSAY

**Examiner**

SARANG AFZALI

**Art Unit**

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/20/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The applicant's amendment filed on 12/20/2007 has been fully considered and made of record.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al. (US 4,305,697) in view of Hellemann et al. (US 6,568,077).

As applied to claim 1, Cohen et al. teach a method of repairing a structurally supportive foot of a cast stator vane segment wherein a portion of a structurally supportive foot from an inner platform of a cast stator vane segment is removed, and a replacement portion (24, Fig. 2) including a structurally supportive foot section of a cast stator vane segment is inserted and metallurgically bonded to the stator vane (Fig. 2).

Cohen et al. teach the invention cited with the exception of explicitly teaching that the replacement section is tack welded followed by electron beam welding, heat treating, and machining of the replacement section to a suitable shape.

However, Hellemann et al. teach a method for repairing a damaged stator vane segment including removing a portion of a stator vane segment (removing damage 18 by milling machine 30, Fig. 2) and securing a replacement section onto the stator

segment (insert 32b, Fig. 5) by tack welds (col. 8, line 8), electron beam welding (conventional welder 34b, Fig. 5, col. 8, lines 11-16) of the insert to the stator vane, heat treating the replacement section (col. 7, lines 55-58) and followed by machining the repaired section (Abstract, line 3) in order to restore the damaged area to a substantially original, pre-damaged configuration.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Cohen et al. with the steps of tack and electron beam welding, heat treating and machining of the repaired section, as taught by Hellemann et al., in order to provide an effective means of repairing and restoring a damaged section of a gas turbine segment into its original configuration.

As applied to claims 5-7, it is inherent that the vane segment is located in a compressor/high pressure section/late stage section because both Cohen et al. and Hellemann et al. disclose the airfoils for gas turbines.

4. Claims 1 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiskes (US 6,394,750) in view of Hellemann et al. (US 6,568,077).

As applied to claim 1, Hiskes teaches a method of repairing a cast stator vane segment wherein a replacement portion (88, Figs. 6 & 6A) including leg portion (46s), platform portion (38s), airfoil portion (64s) and foot portion (52) of a cast stator vane segment is inserted and secured to the stator vane (34, Fig. 6).

Hiskes teaches the invention cited with the exception of explicitly teaching that the replacement section is tack welded followed by electron beam welding, heat treating, and machining of the replacement section to a suitable shape.

However, Hellemann et al. teach a method for repairing a damaged stator vane segment including the removing of a portion of a stator vane segment (removing damage 18 by milling machine 30, Fig. 2) and securing a replacement section onto the stator segment (insert 32b, Fig. 5) by tack welds (col. 8, line 8), electron beam welding (conventional welder 34b, Fig. 5, col. 8, lines 11-16) of the insert to the stator vane, heat treating the replacement section (col. 7, lines 55-58) and followed by machining the repaired section (Abstract, line 3) in order to restore the damaged area to a substantially original, pre-damaged configuration.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Hiskes with the steps of tack and electron beam welding, heat treating and machining of the repaired section, as taught by Hellemann et al., in order to provide an effective means of repairing and restoring a damaged section of a gas turbine segment into its original configuration.

Note that although Hiskes and Hellemann do not teach removing a portion of a structurally supportive foot from an inner platform of a cast stator vane segment, it would have been obvious to one of ordinary skill in the art to have found the method equally as applicable to a foot section of both inner and outer platform portions in order to provide an effective means of repairing a damaged component of a gas turbine engine.

As applied to claims 5-7, it is inherent that the vane segment is located in a compressor/high pressure section/late stage section because both Hiskes and Hellemann et al. disclose the airfoils for gas turbines.

### ***Response to Arguments***

5. Applicant's arguments filed 12/20/2007 have been fully considered but they are not persuasive.

Applicant's amendment to claim 1 and cancelling of claim 2 are accepted.

Applicant's main argument ("Remarks", Page 1, paragraph 4) is that "neither Hiskes and/or Hellemann disclose, nor even suggest repairing any kind of structurally supportive structure" as claimed by the Applicant's newly amended claim 1 and as such, "Hiskes and Hellemann, even if combined, are deficient as references against Applicant's invention."

The Examiner respectfully disagrees with the above argument. As Applicant agrees, Hiskes teaches a method of repairing a platform by removing a portion of the platform and joining a replacement section therein and Hellemann teaches the use of conventional electron beam welder to secure the replacement insert.

The Examiner believes that since both Hiskes and Hellemann teach repairing of damaged portions of stator vane segments, regardless of whether the repaired portion is on a structurally or non-structurally supportive structure, in combination, they teach the Applicant's claimed method steps and as such, maintains that newly amended claim 1 is still rendered obvious by Hiskes et al. in view of Hellemann et al.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARANG AFZALI whose telephone number is (571)272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3726

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarang Afzali/  
Examiner, Art Unit 3726  
3/4/2008

/David P. Bryant/  
Supervisory Patent Examiner, Art Unit 3726